AMENDMENTS TO THE CLAIMS:

Please amend claim 1 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) Apparatus for magnetic resonance imaging a target object, said apparatus comprising:

a magnetic resonance imaging scanner for exciting said target object and recovering at least one line of imaging data in k-space;

a first sensor for detecting a signal indicative of a position of said target object relative to said magnetic resonance imaging scanner;

classifying logic for classifying said at least one line of imaging data into one of a plurality of groups of lines of imaging data in dependence upon said position detected by said ~~second~~first sensor as said target object was excited, each group of lines corresponding to one of a plurality of contiguous ranges of position relative to said magnetic resonance imaging scanner; and

scan terminating logic for detecting when two or more groups of lines corresponding to contiguous ranges of position together ~~containing~~contain a set of lines of imaging data spanning k-space from which an image can be derived and terminating data acquisition.

2. (original) Apparatus as claimed in claim 1, wherein said target object is subject to periodic motion, further comprising a second sensor for detecting when said target object is at a predetermined state within said periodic motion, and wherein said magnetic resonance imaging

scanner is responsive to said second sensor detecting said target object is at said predetermined state to trigger said excitation.

3. (previously presented) Apparatus as claimed in claim 1, wherein said target object is an in vivo organ.

4. (original) Apparatus as claimed in claim 3, wherein said target object is a heart.

5. (original) Apparatus as claimed in claim 4, wherein said second sensor is an ECG sensor.

6. (previously presented) Apparatus as claimed in claim 1, wherein said first sensor detects changes in position of said target object due to respiration.

7. (original) Apparatus as claimed in claim 6, wherein said first sensor is a magnetic resonance sensor for sensing diaphragm position.

8. (previously presented) Apparatus as claimed in claim 1, wherein when a line of imaging data can be selected to be acquired on either side of k-space corresponding to two different groups of lines, said line is acquired in that group closest to forming one of two or more groups of lines corresponding to contiguous ranges of position together containing a set of lines of imaging data spanning k-space from which an image can be derived.

9. (previously presented) Apparatus as claimed in claim 1, wherein at least one group of lines close to a central position detected by said first sensor corresponds to a smaller range of positions than a group of lines further from said central position.

10. (original) A method of magnetic resonance imaging a target object, said method comprising the steps of:

exciting said target object and recovering at least one line of imaging data in k-space using a magnetic resonance imaging scanner;

detecting a signal indicative of a position of said target object relative to said magnetic resonance imaging scanner;

classifying said at least one line of imaging data into one of a plurality of groups of lines of imaging data in dependence upon said position detected as said target object was excited, each group of lines corresponding to one of a plurality of contiguous ranges of position relative to said magnetic resonance imaging scanner; and

detecting when two or more groups of lines corresponding to contiguous ranges of position together containing a set of lines of imaging data spanning k-space from which an image can be derived and terminating data acquisition.

11. (original) A computer program medium storing a computer program for controlling a computer coupled apparatus for magnetic resonance imaging a target object, said apparatus comprising:

a magnetic resonance imaging scanner for exciting said target object and recovering at least one line of imaging data in k-space;

a first sensor for detecting a signal indicative of a position of said target object relative to said magnetic resonance imaging scanner; said computer program serving to control said computer to perform the steps of:

classifying said at least one line of imaging data into one of a plurality of groups of lines of imaging data in dependence upon said position detected as said target object was excited, each group of lines corresponding to one of a plurality of contiguous ranges of position relative to said magnetic resonance imaging scanner; and

detecting when two or more groups of lines corresponding to contiguous ranges of position together containing a set of lines of imaging data spanning k-space from which an image can be derived and terminating data acquisition.